

Improvements to the I-81 Corridor



STAR
solutions

Safer Transport and Roadways

October 2, 2003

Father, Son Killed In I-81 Truck Wreck

The News-Gazette®

Informing The Rockbridge Area For 200 Years

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Georgia student and his brother were 3 miles from exit for W&L

Wreck on I-81 claims the life of W&L senior

The student apparently was trying to pull into the left lane when a tractor-trailer crashed into the rear of his Lexus, police said.

By **MATT CHITTUM**
THE ROANOKE TIMES

A Washington and Lee University senior on his way back to school after Thanksgiving break was killed in a crash with a tractor-trailer Sunday night on Interstate 81 in Rockbridge County.

Cullum Owings, 22, and his younger brother Pierce, a W&L freshman, had driven from their home in Atlanta all the way to mile marker 185 — just three miles short of the exit for W&L, state police said.

The death marked the 11th this year on the stretch of Interstate 81 between Wythe County and Rockbridge County.

Traffic was stop-and-go on northbound I-81 at the time of the 8:15 p.m. crash, police said.

Cullum Owings, who was driving, was apparently trying to pull into the left lane when a truck crashed into the rear of Owings' 1992 Lexus sedan, according to state trooper W.L. Warren. The truck had pulled to the left to try to miss the car. Once hit, the Lexus spun around and was smashed broadside between the



tractor-trailer's cab and an embankment, Warren said.

Owings was alive when emergency workers reached him, but died before he could be extracted from the wreck, Warren said. He was pronounced dead at the scene about 10 p.m. Pierce Owings was treated at Stonewall Jackson Hospital and released.

The truck's driver, Steven M. Rodgers, 40, of Cornersville, Tenn., was charged with reckless driving, police said.

Cullum Owings was a business administration major and a member of the Sigma Alpha Epsilon fraternity.

W&L students learned of his death Monday in a campuswide e-mail, which also reminded them of counseling services available on campus.

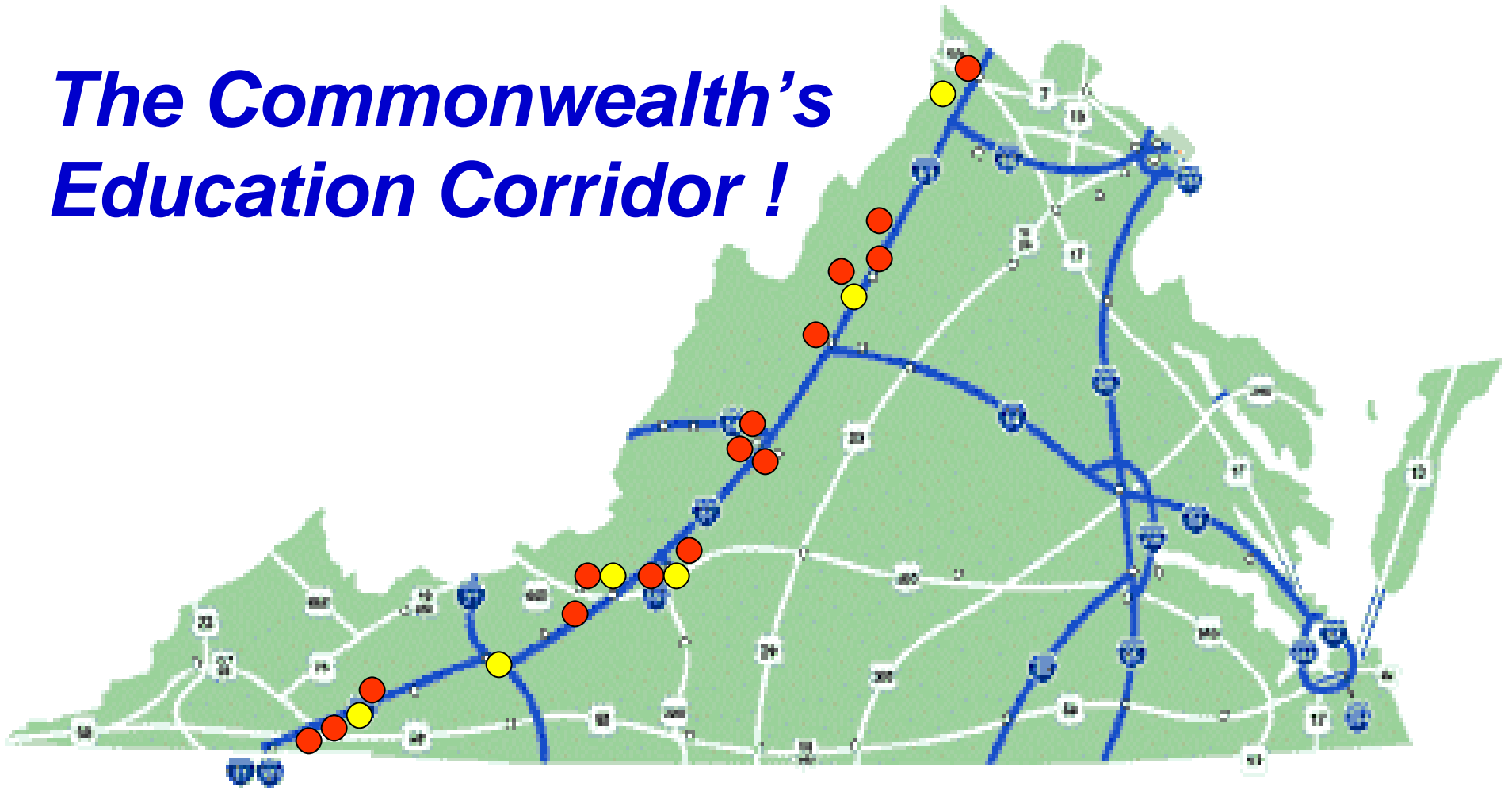
Though final exams are just a

week away, the college is providing buses to take students to a memorial service at 10 a.m. Thursday in Atlanta. The buses will leave at 9 a.m. Wednesday. Friends and family of the Owings have offered to put up students who attend the service.

Owings' death reverses a trend of fewer deaths on this stretch of I-81 in the last four years. Ten people died on the highway last year, down from 26 in 1998. Authorities have attributed the decline to increased patrols, lower speed limits and more cautious drivers. The all-time high for fatalities on the road came in 1988, when 28 people were killed on that part of the interstate.

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The Commonwealth's Education Corridor !



● Universities

● Community Colleges

18 months (3/01 – 8/02)

42 Deaths

1,628 Injuries

2,845 Accidents



Photo courtesy of Josh Meltzer, Roanoke Times

THE ROANOKE TIMES

ROANOKE, VIRGINIA

SUNDAY, JANUARY 16, 2000



DEAN MUKLEVICZ

JONATHAN NABORS

LEAH NABORS

DOUG AUSTIN

BRIAN LEE

HAROLD BOSTWICK

ZAHREAH DICKS

STEVEN DUNHAM



RALPH LASSITER JR.

ALBERT KIEHL

IRENE KIEHL

JOHN RONAYNE



ROBERT GARRARD III

MARQUES HAMPTON

ANTOINETTE HAMPTON

ROBERT SCHWATKA

MARGARET SMITH

CARI SMITH

ISAIAH REDD

Lives lost



ON INTERSTATE 81

Last year, 19 people were killed on our stretch of the interstate.



Working with VDOT to Make I-81 Safer for Everyone



STAR Solutions Proposal

Addresses Corridor needs

Need

Solution

Enhance Safety



Separate Trucks & Cars

Increase Capacity



Expand to 4-lanes

Provide Funding



Solid Financing Plan

Address corridor
design challenges



Proven Local team

Working with VDOT to Make I-81 Safer for Everyone



I-81 Challenges

- Disproportionate mix of car & truck traffic
 - Car and truck traffic to double in the next 20 years
 - Truck traffic is growing at a faster rate
- Safety
- Intermodal efficiency
- Terrain
- Funding
- Environmental

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Environmental Coordination

- Corridor-wide tier 1 document
- Concurrent tier 2 study
- Project specific Memorandum of Understanding
- Work with VDOT Environmental Consultant to develop designs to:
 - Minimize impacts
 - Advance mitigation in critical sections

How STARs can assist VDOT in Optimizing the Effort

- Traffic forecasting
- Traffic modeling of entire corridor
- Microsimulation of interchange/toll operations
- QA/QC document reviews
- Community impact assessment
- Public involvement activities
- Technical corridor-wide analysis as needed

Impact of Truck Traffic on I-81








- Truck Capacity
 - Designed for 15% trucks
 - Currently carrying up to 40% trucks
- Majority of trucks pass through Virginia



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I-81 Average Daily Truck Traffic*

1971			1,700
1997			10,000
		 (U.S. Average Interstate Truck Traffic)	3,500
2020			20,000

* Freight Capacity for 21st Century,
Transportation Research Board, 2003



= 1,000 Trucks

An I-95 Approach Doesn't Work for I-81

- Capacity provided by 3rd lane completed 10 years ago is already surpassed
- Many problems on I-81 attributable to terrain – do not exist on I-95
- Truck volumes on I-95 average less than 23% (less than 12% in urban areas)
- Cars are forced to 3rd lane which can be dangerous

Our Solution

- Dedicated truck lanes
- At least 4 lanes in each direction
- Improved interchanges to reduce bottlenecks
- 20 yr pavement warranty
- Truck parking areas in the median
- Significant ITS investment

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An aerial photograph showing a multi-lane highway interchange with several overpasses. In the foreground, there is a large parking lot filled with white semi-trailers, a blue-roofed building, and another parking lot with cars. The background features rolling green hills and a distant town under a clear sky.

Interchanges

74 Improved

4 New / Replace

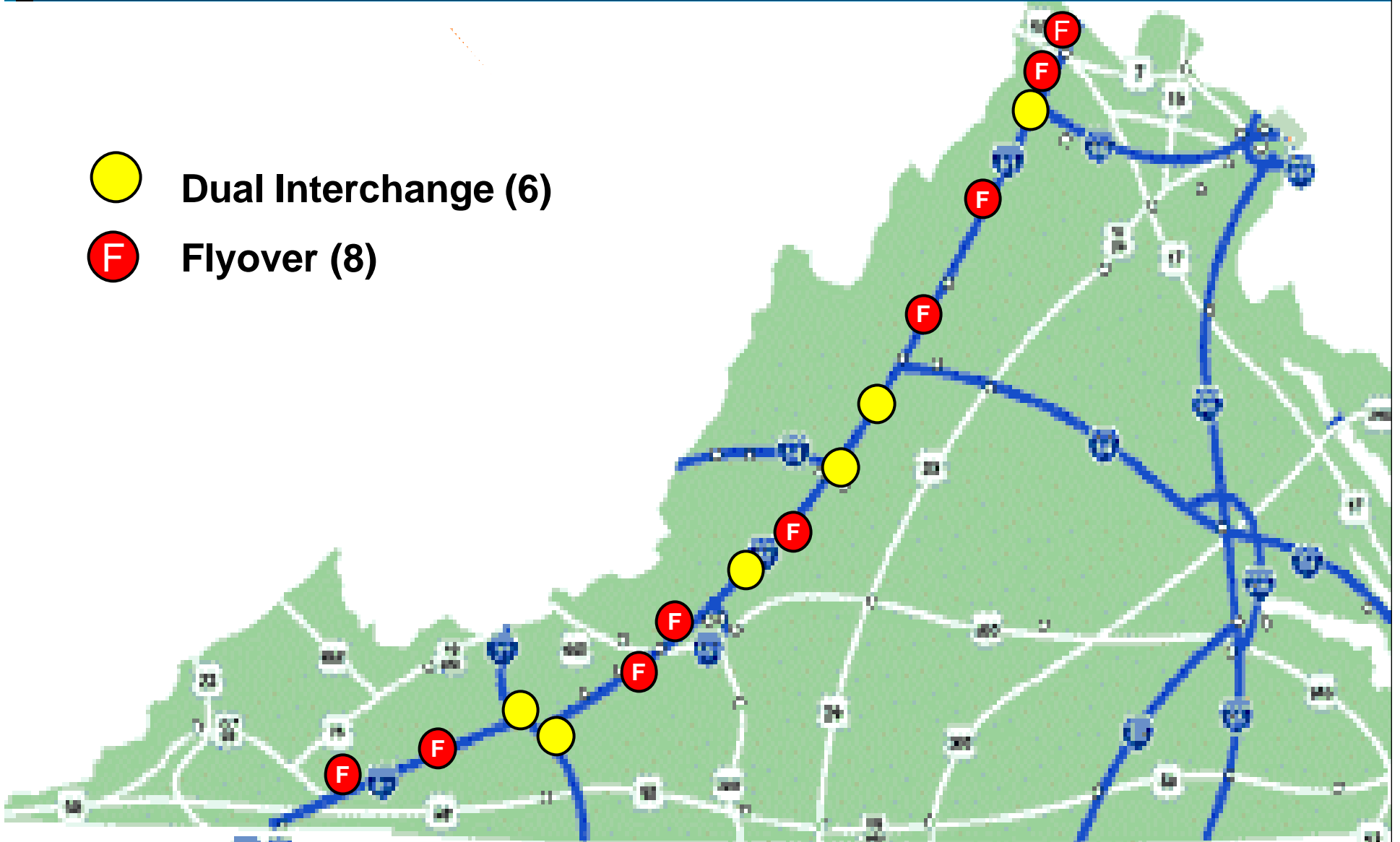
6 Dual

2 Combined

86 Total

Location of Truck Ramps and Flyovers

- Dual Interchange (6)
- F Flyover (8)



Flyovers





Bridges

105 Retrofit / Widen

245 Replace

38 New

388 **Total**

Pavement Warranty

- Best value for the life of the project
- Life cycle cost analysis
 - Over \$0.5 billion savings
- Reduced conflicts with future traffic
- Quantifiable performance criteria
 - Smoothness, rutting, potholes, etc.
- Preventive maintenance

Truck Rest Areas

- Six locations
- 200 spaces per location
- 1200 new truck parking spaces in the corridor
- Eliminates shoulder and ramp parking



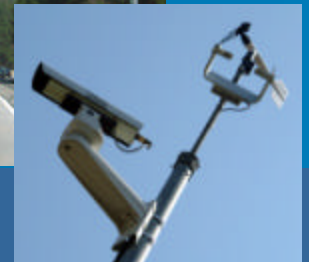
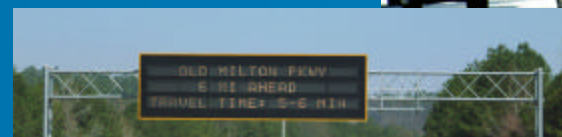
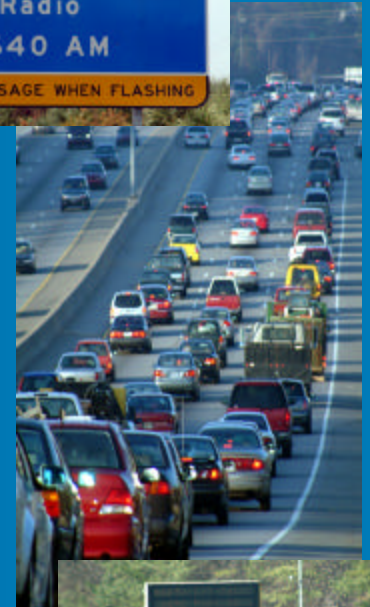
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ITS Infrastructure

Our vision is a true highway of the future...

- Physical Infrastructure \Rightarrow Greater vehicle capacity
- ITS Infrastructure \Rightarrow Optimal use of capacity
- Fiber optic infrastructure offers secondary benefits
- Enables safer work zones



Intermodal Solution

- Improvements in Manassas-Riverton corridor divert 560,000 trucks
- Estimated capital cost of \$111 million includes \$55 million for Virginia Railway Express
- Rail Project can be implemented concurrently with STAR Solutions' I-81 improvements
- Additional rail improvements possible with broader approach (eastern half of U.S.)

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Potential Truck to Rail Conversion











560,000 per year

1,500 per day

1 per minute !



I-81 Average Daily Truck Traffic*

1971			1,700
1997			10,000
		 (U.S. Average Interstate Truck Traffic)	3,500
2020			20,000
		(Less potential diversion to rail per STAR plan) 	1,500
			18,500

* Freight Capacity for 21st Century,
Transportation Research Board, 2003

 = 1,000 Trucks

Overview of I-81 Financial Plan

- Public-Private “Funding Partnership” among private sector, FHWA & VDOT
 - Toll financing (bonds 66% of project cost)
 - Federal & State funding (33% & 1%)
 - Federal funding includes both grants & loans
 - Financial Plan does not rely on one specific funding source

STAR Solution's Plan

- Mitigates risks and is flexible
 - Sufficient funding is arranged to complete ALL work programmed through the completion of each Phase of the Project
 - Plan can be modified if conditions change
- \$6.3 B = Project cost in 2003 dollars
- \$7.9 B = Project cost in year of expenditure

State & Federal Funding & Credit Assistance

- CTB unexpended allocations for I-81 projects
 - \$98M in current Transportation Development Plan
- Federal earmarks for SAFE lanes
 - \$1.6 B
 - Separated truck lanes is championed by Congressman Don Young, Chairman of the House T&I Committee
- TIFIA credit assistance
 - Direct loans fund approximately 13% of project cost

Toll Configuration & Rates

Toll Configuration

- 100% ETC “closed” toll on commercial trucks only
- Lower toll rate while under construction

Toll Rates

- 12.3 cents per mile begins in 2007 (interim)
- 27.4 cents per mile in 2009 on completed Phase 1

Value to Commonwealth

Delivery of \$7.9 B I-81 project

- Only \$98 M of VDOT/CTB funding (1%)

Toll revenue financing

- No Commonwealth or CTB debt

Federal earmarks for separated SAFE lanes

- New money to Virginia

KPRI pavement warranty

- Reduced costs

Financial Plan

- Does not require action by the General Assembly

Working with VDOT to Make I-81 Safer for Everyone



STAR Solutions Financial Commitment

Private Sector Risk Sharing

STAR Solutions proposes a \$100 Million revolving line of credit to support Bond debt service if required.

- True Public Private Partnership by risk sharing
- Demonstrates STAR Solution's confidence in the Project

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Economic Benefits

- Generates jobs and tax revenues along the I-81 corridor and Virginia
- Reducing congestion leads to economic growth and increased tourism
- Savings through warranty approach

\$1 billion
investment
generates 34,437
jobs throughout the
economy

Access Brings Business

2,451 new jobs

\$320 million in investments



Map: U.S. Census Bureau

“Congress should direct DOT, in cooperation with the states and the private sector, to study the costs and market potential of **exclusive truck facilities** and to examine needs for additional ancillary highway facilities for trucks **to reduce truck-car conflicts**, such as rest areas and parking and staging areas. Such facilities should be **paid for by user fees.**”

Freight Capacity for the 21st Century
Transportation Research Board, 2003

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The STAR Solutions Team

- KBR
- Koch Performance Roads



Working with VDOT to Make I-81 Safer for Everyone



Construction Contractors

- Adams Construction
- English Construction
- W&L Construction
- APAC
- Branch Highways
- Moore Brothers
- Fairfield Skanska
- Lanford Brothers

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Engineering Firms

- VDOT
- Wilbur Smith & Associates
- Hayes, Seay, Mattern & Mattern
- American Consulting Engineers
- Earth Tech
- Parsons Brinckerhoff
- URS Corporation
- CH2M HILL
- HDR
- HNTB
- TransCore
- Hurt & Proffitt
- Thompson & Litton
- BELSTAR, Inc.

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Finance & Public Sector Relations

- Citigroup
- Lehman Brothers
- Morgan Keegan
- Commonwealth Service Co.
- McGuireWoods Consulting
- PPSConsult
- Trebor Group

Working with VDOT to Make I-81 Safer for Everyone



STAR Solutions Virginia Offices

Over 7,000 Employees



STAR Solutions is the Team to Work with VDOT for

- Safety
- Capacity
- Efficient Commerce
- Job Creation
- Sound Financing Plan

*Let's get moving together to re-establish
Virginia as a leader in innovative
transportation solutions*

Working with VDOT to Make I-81 Safer for Everyone



Partnering with VDOT
to make I-81 safer for
everyone!

